

FEBRUARY, 1958

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EDITORIAL



MR. MEMBER

History has shown that as mankind develops the necessity arises for organisation. Even early cave-men found that in order to have the requirements for existence and defence from natural enemies, some person or persons had to be entrusted with the task of directing the majority. In this way "civilisation" as we now call this organisation was evolved.

The same manifestation of planning can be found in various sections of life as it presents itself today: Boards have Directors; Trusts have Committees, and so on. Our own Institute has its Divisional Councils charged with multitudinous duties of planning.

But for whom and what is this planning? If the fundamentals are examined, it will be noted that the organisation was for the benefit of the general participant. Thus the duty of the Director, Chairman or what-have-you and his committee is to work for the average individual; in other words, Mr. Member.

However, where does Mr. Member fit in; is he but a silent figure on whom benefits both good and bad are showered?

In the basic set-up, it was the individual who, in co-operation with his fellows, appointed a leader and then accepted his direction. Hence, the individual is the person who has

the right to voice his opinion as to what action should be taken with respect to his welfare.

Mr. Member of the W.I.A., therefore, by speaking at a meeting indicates to his Council his personal thoughts on some matter. If Mr. Member and his fellows discuss some matter freely Council can be guided by a majority decision. Plainly then it is the duty of Mr. Member to state his ideas; to give others the benefit of his opinions, so that through enlightened discussion something can be acted upon.

A postmortem with its trenchant criticism doesn't bring anything to life.

And after voicing his notions and accepting a majority decision, where is Mr. Member now? Because he, together with his fellows, is the Institute, it is his duty to undertake the tasks given him by his leader. Even more than this, it is his privilege to offer to undertake positions and projects which he can give his especial attention.

An Institute consisting of Mr. Member and his fellows banded together, stating their ideas, doing a share of the work and enthusiastically aiming at better things for all is a very worthwhile Institute indeed.

Mr. Member—I salute you.

FEDERAL EXECUTIVE.

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Mathematical Considerations of S.S.B.

BY JOHN ALBERT ADCOCK,* VK3ACA

IN "Amateur Radio," July, 1957, appeared an article on s.s.b. which pointed out that it lacked many of the advantages previously claimed for it. I think that the explanation given in that article was only half the story and a more detailed explanation would create a better understanding of the system. I feel that many Amateurs are not honest about the results they get from s.s.b. reception and think something like this: "It sounds awful, but just because I cannot tune it in properly I cannot blame his transmission. I will tell him it sounds OK." I hope the following explanation will help to clear up the apparent disagreements between different explanations of the system.

First of all let us look at some mathematical relationships. For simplicity, we will assume we are dealing with simple sine waves. A modulated wave can be looked upon from two points of view. Where you are concerned with bandwidth, it can be looked upon as a number of single sine waves, or where you are concerned with amplitude it can be looked upon as an envelope or a product of a carrier wave and a modulating wave. The instantaneous amplitude of the envelope will equal the sum of the instantaneous amplitudes of the individual sine waves in the former case.

Let us call the amplitude of our carrier A and the frequency f_c , then the instantaneous amplitude of the carrier will be:

$$A \sin 2\pi f_c t \dots \dots (i)$$

where t is time in seconds.

Similarly, let the amplitude of the modulating wave be B and its frequency f_m , then the instantaneous amplitude of this wave will be:

$$B \sin 2\pi f_m t \dots \dots (ii)$$

The expression for the resultant wave when (i) is amplitude modulated by (ii) will be:

$$\sin w_1 t (A + B \sin w_2 t) \dots (iii)$$

w_1 and w_2 have been substituted for $2\pi f_1$ and $2\pi f_2$ for simplicity.

This product can be changed into an identical sum and we get the expression:

$$A \sin w_1 t + \frac{B}{2} \cos (w_1 - w_2) t - \frac{B}{2} \cos (w_1 + w_2) t \dots (iv)$$

It will be noted that the two side bands of expression (iv) are of half the amplitude of the original modulating wave expression (ii); one with frequency $f_1 + f_2$ and the other with frequency $f_1 - f_2$.

Now if we remove one side band and double the amplitude of the other side band, we get the expression:

$$A \sin w_1 t + B \sin (w_1 + w_2) t \dots (v)$$

(the change in phase of the remaining sideband will not make any difference after the removal of the other side

band). The expression for the instantaneous amplitude of the resultant wave will be:

$$\sqrt{A^2 + B^2 + 2AB \cos w_2 t} \sin \left[\frac{(2w_1 + w_2)}{2} t + X \right] \dots (vi)$$

where X is a variable depending upon the values of A, B, w_1 and w_2 .

From expression (vi) it is seen that the expression for the instantaneous amplitude of the envelope is:

$$\sqrt{A^2 + B^2 + 2AB \cos w_2 t} \dots (vii)$$

If A is large as compared with B, then the expression is approximately:

$$A + B \cos w_2 t \dots (viii)$$

It can be seen that the frequency of this wave is equal to the difference between the frequencies of the two original sine waves of expression (v) and equal to our original modulating wave frequency. Also, it will be noted that the frequency and amplitude of this approximate envelope is identical to that of the envelope of our original amplitude modulated wave of expression (iii).

For the remainder of this discussion, expressions (iii) and (iv) represent amplitude modulated waves where the modulating frequency is f_m and expression (v) will represent a single side band of frequency ($f_1 + f_2$) and an injected carrier of frequency f_1 . The beat frequency in the second case will be f_2 represented by expressions (vii) and (viii). The power of any of these waves in any part of a circuit will be proportional to the square of its amplitude. Since the two side bands (or frequencies) of expression (iv) are half the amplitude of the one of expression (v), then each of these waves of expression (iv) contain one quarter the power of the single sideband of expression (v). The total sideband power of our considered wave in expression (iv) is half that of expression (v).

It will be seen that the audio power extracted from the a.m. signal is the same as that from the s.s.b. For a fully modulated wave (i.e. A = B) the sideband power of our s.s.b. will be equal to the carrier power of the a.m. signal. If the s.s.b. requires double the power of the a.m. signal's sidebands to produce the same audio power in a receiver, what becomes of the other half of the power contained in the single sideband? The answer lies in the square root sign of expression (vii). It can be shown that the envelope of expression (vii) contains twice the power of the envelope of expression (viii). By Fourier's theorem, expression (vii) can be resolved into a fundamental and harmonics.

$$\text{Instantaneous amplitude of envelope} = a + b \cos w_2 t - c \cos 2w_2 t + d \cos 3w_2 t - \text{etc.} \dots (ix)$$

where the values of a, b, c, d, etc., depend upon the ratio of B to A. From this expression it is seen that the extra power in expression (vii) is used up in

producing these extra harmonics and the d.c. component a. As has been pointed out from expression (vii), these harmonics are negligible when A is large as compared with B.

What about signal-to-noise ratio? The noise power at a particular point in the audio circuit of a receiver will be proportional to the bandwidth of the i.f. channel. Therefore when using a receiver of a given bandwidth and when comparing an s.s.b. signal with an a.m. signal of carrier power equal to the peak power of the s.s.b. signal, there will be no advantage in signal-to-noise ratio of s.s.b. compared with a.m. In fact unless the amplitude of the injected carrier in the s.s.b. receiver is much larger than the peak amplitude of the sideband, distortion will result. If a receiver is used which has a bandwidth to take best advantage of the system being received, then the s.s.b. receiver will cut the noise power by half and thus the s.s.b. will have a 3 db. signal-to-noise ratio advantage over a.m.

There are two ways that I know of to improve this situation.

(1) By using a square law detector in which the resulting audio amplitude from expression (vii) would be proportional to $B \cos w_2 t$. A square law detector condition can be approximated to by using a very low signal input to a diode detector. I have not gone into the mathematics involved in this case. Incidentally the effect of a square law detector can be approximated to by using a diode detector with a small signal input.

(2) By using a "product detector" or "converter". This type of detector is used in what is sometimes called a "synchronous receiver". In this type of detection, the injected carrier is actually modulated by the received sideband. The expressions for the instantaneous amplitude of the modulation envelope of this new wave will be:

$$\sin w_1 t [A + \sqrt{2} B \sin (w_1 + w_2) t] \dots \dots \dots (x)$$

$$= A \sin w_1 t + \sqrt{2} \frac{B}{2} \cos w_2 t - \frac{\sqrt{2} B}{2} \cos (2w_1 + w_2) t \dots (xi)$$

$\sqrt{2} \frac{B}{2} \cos w_2 t$ is the only sideband that will be audible and it will be noted to have the same frequency as the original audio we started with in expression (ii).

To study the signal-to-noise ratio in this particular case, it must be realised that comparison of signal and noise powers in a particular receiver is purely relative. It should also be noted that the power in a sine wave will be proportional to the square of its amplitude.

Let the noise power be N and the signal power of the original single sideband or the power of the original a.m. carrier be P. The actual signal power in the expression $[A + B \cos w_2 t]$

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from expression (iii) and (viii) will contain only $P+2$, because this expression represents the peak values or envelope of the modulated wave. The $\sqrt{2}$ value in expressions (x) and (xi) was put in to make the sideband signal power equal to P . The signal power will be divided equally between the two sidebands.

In the case of expression (iii) the signal-to-noise ratio will be:

$$\frac{1}{2} \frac{P}{N} = \frac{P}{2N}$$

In the case of expression (viii) the signal-to-noise ratio will be:

$$\frac{1}{2} \frac{P}{N} = \frac{P}{2N}$$

In the case of expression (xi) the original noise power will be divided equally between the two sidebands and the signal-to-noise ratio will be:

$$\frac{1}{2} \frac{P}{N} = \frac{2P}{N}$$

Thus it will be seen that there is a 6 db. signal-to-noise ratio improvement using this new system compared with equivalent a.m.

SUMMING UP

1. There is no improvement in signal-to-noise ratio in receiving s.s.b. as compared with a.m. with an equivalent power on an ordinary receiver.

2. If the receiver bandwidth is such as to take best advantage of the system being received, then s.s.b. has a 3 db. signal-to-noise ratio advantage over equivalent a.m.

3. Unless the injected carrier is much stronger than the sideband being received, distortion will result. (20% second harmonic when the sideband amplitude and injected carrier amplitude are equal.)

4. A receiver with a rectifier type detector is actually unsuitable for s.s.b. reception.

5. To extract all the intelligence from the sideband it is necessary to use a product detector.

6. 6 db. is the maximum signal-to-noise ratio advantage of s.s.b. over equivalent a.m. using this system.

7. Some further advantage of s.s.b. can be realised if the average power of the s.s.b. signal is considered, but our licence only allows a peak input of 100 watts.

CONCLUSION

If you have any qualms about accepting this seemingly impractical mathematical method of arriving at these conclusions, ask yourself honestly have you ever heard an s.s.b. signal that really sounded like a.m. I realise that there are many advantages of s.s.b. and I may be a little biased against it. S.s.b. will probably increase in popularity eventually, so that it will be necessary to re-build all our high frequency gear. In any case, c.w. still has the edge on all these systems! Incidentally, articles describing product type detectors appeared in "CQ" for June '57 and "QST" for Sept. '57.

If any person is interested in how expressions (iii), (iv), (v) and (viii) were developed, I would be pleased to supply him with the reasoning.

COMMUNICATIONS KEPT OPEN BY GRIFFITH HAMS

On 22nd December, 1957, Griffith Amateurs were approached by Councillor Murrell, from Hillston, who advised that communications had been lost between Hillston, Mt. Hope and Matakana due to extensive bush fires in the area. He asked that the Amateurs go to Hillston with portable radio equipment to assist the bush fire fighters with communications.

Four stations were set up, one being at Hillston and three were stationed by Cr. Murrell with bush fire fighters.

Stations which operated were VK-2PL, VK2AXD, VK2AEB, and VK2HJ; they were assisted by VK2FS and VK2ZDM. The equipment used was an AT21 and R1155 at Hillston base station, and out-stations were ATR2B, ATR4B and No. 11 set.

7050 Kc. was used throughout as the No. 11 set does not tune 80 metres, however it was considered that 80 metres would have been the better band to operate on that particular night.

Communications were carried out between out-stations and from out-stations to base from 1700 hours on the 22nd to 1200 hours on 23rd December. At this stage it was considered that no further assistance could be given by the amateurs and they returned to Griffith.

The above report was made available by VK2PL and the N.S.W. Divisional Council of the W.I.A. would be pleased to receive reports from any other members called upon to assist in a like manner.

New! A & R T.V. Voltage Adjuster



An Essential Instrument for the T.V. Serviceman

With the increasing number of Television Receivers now being installed, the demands made upon the T.V. serviceman's time will increase steadily.

In certain areas reception difficulties often occur due to low supply voltage, and it is certain that some ready means of detecting this condition would assist the serviceman, and perhaps save valuable time in endeavouring to locate a suspected fault within the receiver. With the above in mind, A & R have available the T.V. Voltage Adjuster as illustrated. Specially constructed and finished in attractive Silver-Grey Hammer-tone, this A & R product provides the serviceman with an invaluable, yet inexpensive, addition to his test equipment.

An Aid to T.V. Installation and Service

Flicker or shrinkage of the Television picture often indicates a low line voltage, leading to complaints of unsatisfactory reception, or to difficulty in adjusting the receiver controls. This condition can be reproduced with an A & R Voltage Adjuster, thus indicating the low voltage condition under test. The T.V. Voltage Adjuster is a simple, portable, and easily adjusted device. The mains taps on the Receiver can sometimes be adjusted to suit, provided the voltage is consistently low.

There are many other applications for the A & R Voltage Adjuster, such as, correction of input voltage to Amateur Transmitting and Receiving Equipment, Tape Recorders, Hi-Fi Audio Equipment, etc., provided that load imposed is within capacity of adjuster. The auto model is quite suitable for these applications.

Servicing Transformerless T.V. Sets

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- Solid cast case, finished in stoved black enamel, full tilting head.



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A quality Crystal Insert with "Zephyril" filter.

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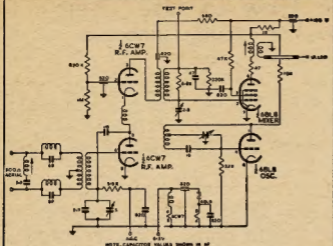
AVAILABLE FROM ALL LEADING TRADE HOUSES

Mullard

TELEVISION

VALVE

SERIES



6CW7

TWIN TRIODE

CASCODE AMPLIFIER

HEATER RATINGS

Vh 6.3V
Ih 330mA

CHARACTERISTICS (each section)

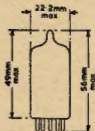
Va 90V
Ia 12mA
Vg -1.5V
gm 6.0mA/V
u 24
Rin 2.0K ohms

* measured at $f = 200$ Mc/s with cathode connections pins 7 and 8 strapped.

The Mullard 6CW7/ECC84 is a double triode specially designed for use as a cascode amplifier in the R.F. stage of television receivers. The first triode is connected as a neutralised grounded cathode amplifier and drives the second triode which is connected in a grounded grid configuration. This arrangement results in a low noise level for the input stage being achieved in the first section, combined with high gain in the second section.

The capacitance between the two triodes is kept to a minimum by an internal shield connected to the grounded grid electrode thus reducing feed back and contributing to stability under AGC conditions. The high gm of 6.0mA/V is obtained with an anode voltage of 90V thus allowing the two triodes to be series connected across a 180V H.T. supply.

592



89A Base



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ASSOCIATED WITH MULLARD LIMITED, LONDON, MULLARD OVERSEAS LIMITED

When something goes wrong in a piece of equipment that has been operating there are a few things the operator should check before doing any voltage testing. Such obvious things as key leads, a.c. power source and plug, fuse, antenna system, etc., should all be checked out. If the tubes are glass, look and see if the heaters are lighting. If the tubes are metal, see if the envelopes are warm to the touch. Should one be hot and the other cold, try another tube in place of the cold one. In other words, try to analyse the problem before actually digging into the equipment.

When a piece of gear fails there are three sign posts that will narrow our trouble shooting area. First, the tubes don't light or aren't warm. Second, there is no plate current present. And last, no grid current shows. In Fig. 1 we don't show meter switching but most transmitters meter both the grid and plate by switching.

We'll start our trouble shooting by taking each of the three visible signs and going through them separately. Table 1 shows the expected meter readings, check points, and trouble spots for the heater circuits, excluding the obvious checking of the a.c. line power, switch S1 and fuse to the power transformer T1. The v.o.m. scale used for each check will depend on the voltage being checked. However, always remember to use the highest scale when checking an unknown voltage point.

You will notice reference to bad wiring and this can mean faulty soldering, poor connections, etc. When checking at a terminal point that has several branches, the test probe should be touched to each of the component leads, not just the terminal point. Also, a common wiring error beginners make

is to solder insulated wire ends to terminals—particularly enameled covered wire. Always remove the insulation and clean the ends of the wires before soldering.

In Table 1, the first column gives the check points where the v.o.m. leads are connected. The second column shows the expected meter reading. The last column lists expected trouble spots.

NO PLATE CURRENT

In our checking in Table 1 we had a clear-cut road to follow. However, in finding why there is no plate current our road has several branches which must be checked out. In Table 2 each check point will show us what has happened up to that particular point. Before doing any checking with the test meter there are a few things to look for that may be the cause of trouble. First, be sure that the key leads haven't been disconnected. If the key isn't closing the circuit then the cathodes of the oscillator and amplifier are not being connected to chassis ground and the tubes won't draw current. If there is grid current but no plate current, then it can be assumed that the power supply is working. However, due to a faulty component or wiring, the power supply output may not be reaching the amplifier. Should you have output from the rig and show no plate current, then it is apparent that the meter isn't functioning or the movement is sticking.

With the heater checks we were only concerned with a.c. so voltage polarity was no problem. In Table 2 we will be working with d.c. and the chassis ground is our reference point; the voltages are either positive or negative with respect to chassis. On the test meter, the lead jacks are marked plus

and minus or are red and black. The black is minus or negative, and this lead is connected to chassis ground for all of the checks in Table 2. Our positive lead is the one used for all the checks.

If there is plate voltage present and the tube does not draw current, there are three things to look for. An open cathode circuit will prevent current from flowing. If there is no voltage at the screen grid, very little or no current will flow. And last, if the grid is biased beyond cut off (and there is no grid drive), the tube won't conduct. In Table 2 we start off at the plate of the tube and work back to the power supply. The first column gives the check point, which is the circled number in Fig. 1. The next two columns indicate the presence of voltage. There are no definite values for voltages given because they would probably be meaningless if applied to your rig. Your instruction manual will give the important voltage and current values and these can be applied in your testing. The last column gives the cause of the trouble.

NO GRID CURRENT

Before making voltage measurements for grid current there are some simple checks that can be tried which may show the trouble spot. Listen to your receiver at the crystal frequency for the oscillator signal. If there is no signal then try another crystal, and don't forget to tune the receiver to the new crystal frequency. Should there be a signal heard from the oscillator, then tune C3 to see if the amplitude of the signal changes. If it does—and gets louder at one point of the tuning—it indicates the oscillator and tuned circuit are operating properly. The trouble

TABLE 1

Heaters Don't Light or Tubes are Cold to the Touch.

Check Points	Normal Reading	If No Reading, Possible Cause
With S1 closed, between 1 and 2.	115 volts a.c.	Faulty power switch. Blown fuse. Faulty wiring in line cord or plug. Blown fuse in house wiring.
Across 6.3 volt heater winding on power transformer.	6.3 volts a.c.	Open heater winding.*
Between the heater pins at tube sockets.	6.3 volts a.c.	Poor ground connection for 6.3 volt winding. Bad connections at tube sockets or terminal soldering points on heater line. Poor ground connections at socket.
Heater pins on tubes. Remove tubes from sockets for this check.	Low resistance †.	Open heater.

* An open heater winding doesn't mean a new power transformer is required. A filament transformer can be installed in the transmitter and the power transformer can be retained.

† Always use the low resistance scales of the test meter for continuity checks, unless it is desired to check the resistance in a circuit or continuity through high-resistance circuits.

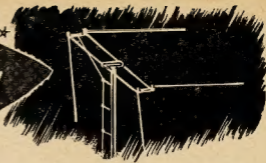
TABLE 2

R.F. Tubes Lit but No Plate Current Indicated

Measure + Voltage between Chassis and Check Point:	Voltage		Cause
	Yes	No	
3	X		See note at bottom of chart.
3		X	This indicates power supply voltage is OK but there is an open circuit between points 6 and 3.
5	X	X	Meter OK, but RFC2 is open.
5		X	Meter open.
4	X	X	Open screen dropping resistor, or C4 shorted.
7		X	Open filament in rectifier tube, wiring error or faulty transformer winding.
8 or 9; close S2. (Use 1,000v. a.c. scale.)	X		Bad rectifier tube. Bad connections at rectifier socket.
		X	Faulty switch at S2. Open winding in high voltage secondary of T1.

If there is voltage at the plate and screen of the amplifier and the circuit being tested uses grid-leak bias (Fig. 1), then the probable reason for no plate current indication would be an open cathode circuit or a defective plate milliammeter.

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no doubts
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is then likely to be in the meter failing to read and show grid current. On any of the tests mentioned above, don't hold the key down any longer than necessary, as the amplifier tube will draw excessive plate current when no excitation is reaching it.

In Table 3 all voltage measurements are made in the same manner as in Table 2, with the exception of the check at point 10. This is the grid of the amplifier and the voltage will be negative with respect to chassis. The meter leads should be reversed for this test, positive lead to chassis ground and the negative lead for testing. Also, a 2.5 mh. r.f. choke must be connected in series with the test lead when checking at point 10. Otherwise, the test meter will detune the grid circuit and no reading or an incorrect one will result. If your transmitter has an r.f. choke between grid and grid leak (R2), then you won't need to use another r.f. choke; the test probe can be touched to the junction of the r.f. choke and the grid leak for the voltage check. If your test meter is the 1,000 ohms-per-volt type, then use the highest voltage scale for this test. The highest scale puts the most resistance in the voltmeter circuit, and the shunting effect on the grid leak is minimized. If a v.t.v.m. is used for testing, then it usually isn't necessary to use an r.f. choke with the probe.

ADDITIONAL TESTS

If grid and plate current are obtained and the transmitter doesn't work, then the trouble should be in the amplifier tank circuit. Continuity checks should be made to determine if there are any wiring mistakes or bad connections. In the case of a pi network as in Fig. 1, the output capacitor C7 should be set at maximum capacity and C8 tuned for resonance as indicated by the dip in plate current. If the tank circuit resonates, then you can be reasonably sure that the transmitter is working and your problem is one of loading or shorted C7.

If the transmitter is a kit or homebrew job, the most common trouble encountered is short circuits. This can be due to bits of solder or wire getting into spots they shouldn't be in, and it sometimes takes considerable searching to find them. It is a good idea to make a few resistance checks before applying power to a newly built piece of gear. The power supply B+ line is usually above chassis ground by the value of the bleeder resistor. A quick check is to switch your test meter to the high resistance scale and connect one lead to the B+ line and the other to chassis ground. The ohmmeter will quickly show the presence of any shorts.

Once you have the piece of equipment working it is an excellent idea to make a record of voltage readings at different test points. Suitable points would be:

- (1) Output of power supply.
- (2) Plate voltage of amplifier and oscillator stages.
- (3) Screen voltage of amplifier and oscillator stages.
- (4) Grid voltage.

These checks should be made with the transmitter operating into a load. The next time the rig acts up you'll have a record to refer to which will probably make your job easier.

It would be impossible to completely cover the subject of trouble shooting in the space permitted here. Such things as self-oscillation, parasitics, etc., are treated in "The Radio Amateur's Handbook."

TABLE 3

No Grid Current Indicated

Step 1.—Check for voltage at point 11. If there is none, then check at point 6 to see if the power supply output is present. If the supply is not functioning, refer to Table 2 for trouble shooting. Voltage at point 6 and none at 11 indicates bad wiring or open RFC1.

Step 2.—Voltage at point 6 and none at point 12 indicates bad wiring, open screen dropping resistor or shorted C1. Check resistor with ohmmeter. Check C1 by removing oscillator tube and measuring resistance between point 12 and ground.

Step 3.—Turn off power and switch test meter to read ohms (high resistance).

Connect one test lead to oscillator grid, point 13, and the other lead to the cathode, point 14. Meter should show approximately the same resistance reading as value of R1. If not, it indicates bad wiring, grid to cathode short in oscillator tube, or resistance of R1 has changed.

Step 4.—Leave one test lead at point 14 and move other lead to point 15. Meter should show continuity. If not, it indicates bad wiring or open RFC3.

Step 5.—Move lead at point 15 to the grounded terminal of key jack and leave attached at point 14. Open and close key. The meter should read when key is closed, indicating continuity from oscillator cathode to chassis ground. If not, check wiring to key.

Step 6.—Turn on power, switch meter to read d.c. high voltage, connect positive meter lead to the chassis and make voltage check at point 10, amplifier, with key closed. Failure to obtain reading when C3 is resonated (see text) indicates bad wiring, grid-to-cathode short or faulty components at C12, LIC3, C13, or R2. Depending on the type of test meter used, an r.f. choke may be needed in series with the test probe. (See text.)

USING MODERN VALVES IN THE TYPE 3 RECEIVER

Editor "A.R.,"

Dear Sir,

I desire to disassociate myself from the article which appeared under the above heading and my name in the November issue, although it does bear some resemblance to a manuscript submitted by me.

Yours faithfully,
Norman Boase.

PREDICTIONS FOR FEBRUARY, 1958

No. E. AUSTRALIA — W. EUROPE S.E. No.		GMT	
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E. AUSTRALIA — S. AFRICA			
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E. AUSTRALIA — FAR EAST			
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W. AUSTRALIA — W. EUROPE			
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W. AUSTRALIA — N.W. U.S.A.			
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W. AUSTRALIA — N.E. U.S.A.			
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W. AUSTRALIA — S. AFRICA			
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W. AUSTRALIA — FAR EAST			
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REMEMBRANCE DAY CONTEST, 1958

MODIFICATION TO RULES

Following the directive given to it at the Federal Convention, the Federal Contest Committee has gathered suggestions from members in the Divisions and from Contest Committees where they exist.

The suggestions which appear below are the results of careful calculations and the discussions on what was really being aimed at in the Contest. These aims seemed to be threefold—

- To provide a lively exchange of contacts;
- To give an incentive for every Amateur in Australia to come into the Contest.
- To have an equitable scoring table and an incentive for each Amateur to contribute towards the winning of the State trophy.

The rules as they stood, gauging from the results and a survey of the stations listed in the logs, fulfilled (a) and (b) but left much to be desired in (c). Only the top six entrants in each Division contributed their score towards the gaining of the trophy. All those others who made more than the qualifying number of contacts gave away points to the top six in the other Divisions.

In response to suggestions by the F.C.C. the VK6 Division has put forward this scheme:—

State score to be calculated by the formula:

$$\text{Average of the top six Logs} + \left(\frac{\text{Logs Entered}}{\text{State Licences}} \times \text{Total of Points from all Entries} \right)$$

It can be seen that all entrants whose scores are not in the top six now contribute to the State effort; thus the larger States like VK3 who, with 70 logs, scored 14,280 points (the best in Australia) will benefit from this scheme.

However, the F.C.C. was still not satisfied that the ratio $\frac{\text{Logs entered}}{\text{State licences}}$ was the best one to use and after working on the table (based on the scores for 1957) and looking at the comments made by the various Divisions during and since the Convention, this formula is suggested:

$$\text{Average of the top six Logs} + \left(\sqrt{\frac{\text{Logs Entered}}{\text{State Licences}}} \times \text{Total of Points from all Entries} \right)$$

State	Total Points	Logs entered State licences	Bonus	Average top six Logs	Points Scored
VK2	12,048	$59 \div 1,156$ $\sqrt{59 \div 1,156} = 0.23$	615 2,770	690 690	1,303 3,460
VK3	14,280	$70 \div 1,093$ $\sqrt{70 \div 1,093} = 0.253$ For 1958? $\sqrt{140 \div 1,093} = 0.357$	915 3,512 5,098	790 790 790	1,705 4,302 5,888
VK5	13,549	$88 \div 416$ $\sqrt{88 \div 416} = 0.454$	2,560 6,151	737 737	3,297 6,888
VK6	7,347	$85 \div 219$ $\sqrt{85 \div 219} = 0.623$	2,851 4,577 8,345	701 701 701	3,552 5,278 9,046
1958?	15,000				

This tends to off-set the very low ratio that the larger States find difficult to overcome and provides a further incentive to those States to get busy and win the trophy; this, VK6 had in mind when their suggestion was made.

The Committee wishes the Divisions—and that means each member through his Council—to adopt either of these formulae for 1958 and 1959 and to forward their votes to the F.C.C., Box 1234K, G.P.O., Adelaide, before the 31st March.

Study the table carefully and note the variations, particularly to the VK2, VK3, VK5, and VK6 scores, brought about by the application of the formulae to the 1957 scores and the possible improved log entry for VK3 and the improved scoring for VK6 which could take place in 1958.

The scoring table is considered suitable.

A further amendment is to Rule 2, to which will be added: "Portable/Mobile operation means that the sta-

tion is not connected to any private or public power plants or mains."

Ratification is required for this change.

Can VK3 push their entry up to 200 logs? And what about VK6 to 15,000 points? That's the question—otherwise note how the scores close up the gap between each State on this year's results when that square root ratio is used.

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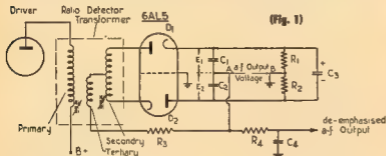
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The requirements of the sound detector in a television receiver are rather varied, and amongst the most important is the need to suppress amplitude variations of the frequency modulated 5.5 Mc/s carrier. In an attempt to gain this a-m rejection without the use of a special limiting stage, the ratio detector was developed. The stage driving the ratio detector is now arranged to amplify for low input levels and to act as a limiter (still with considerable gain) when the input rises beyond a predetermined level.



The voltages applied to the two diode circuits (referring to Fig. 1) are each the vector sum of the tertiary winding voltage and the appropriate half secondary voltage. The normal phase relationships existing in coupled circuits result in a phase difference of 90° between the latter two voltages when the incoming signal is at the centre frequency, i.e., in the condition of zero modulation. This phase difference varies as the instantaneous frequency is affected by the degree of modulation and causes a variation in amplitude of the voltage applied to the diode circuits. One increases and the other decreases as the instantaneous frequency increases and vice versa. Thus the frequency deviation of the incoming signal is converted to an amplitude variation of the voltages applied to the diode circuits.

C3 is a large capacitor which becomes charged in the presence of a carrier and plays a major part in the suppression of amplitude modulation of the input signal. The discharging time constant of C3 through R1 and R2, the diode load resistance, is long compared to the period of the lowest audio frequency to be detected (usually about 0.2 seconds). The voltage across C3 is hence maintained constant over short intervals of time.

Consider the operation of the circuit at a time when the frequency of the incoming signal differs from the centre frequency by a deviation, Δf , such that the voltage applied to D1 is greater than that applied to the diode D2. The current flowing in C1 must be greater than that flowing in C2. Hence the voltage developed across C1 (E1) is greater than that developed across C2 (E2). The sum $E1 + E2$ is held constant by C3 and hence point A must be negative relative to point B (earth). So it can be seen that the instantaneous voltage at point A will vary in proportion to the difference between E1 and E2, and hence to the instantaneous value of Δf , and at a rate equal to the rate of change of Δf . Thus the audio output voltage follows the audio modulation of the sound carrier.

R3 is a small resistance which limits the peak diode currents, thus tending to reduce the effects of unbalance in the two halves of the circuit. R4 and C4 form the de-emphasis network which is necessary to correct for the pre-emphasis used at the transmitter to gain an improved signal to noise ratio.

A twin diode ideally suited for use in such a circuit is the Radiotron 6AL5. The performance of a circuit using the 6AL5 is described in Radiotronics, June, 1957. The 6AL5 is also suitable for use as a video detector, a.g.c. clamp and in other applications.

For further information on the 6AL5 and other Radiotron Television Valves, consult the TV1 Booklet. Additional copies of this advertisement are available free and post free on request.



6AL5[†]

SOCKET CONNECTIONS



bottom view

- Pin 1 — Cathode of Diode No. 1.
- Pin 2 — Plate of Diode No. 2.
- Pin 3 — Heater.
- Pin 4 — Heater.
- Pin 5 — Cathode of Diode No. 2.
- Pin 6 — Internal Shield.
- Pin 7 — Plate of Diode No. 1.



AMALGAMATED WIRELESS VALVE CO. PTY. LTD.

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CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writer, and do not necessarily coincide with those of the publishers.

S.S.B. ACTIVITY

Editor "A.R." Dear Sir,

Many have the impression that lack of activity on s.s.b. does not justify the effort required to convert to that mode of operation.

As at 0815 hrs. GMT., 2nd January, 1958, I have worked the following 100 countries on two-way s.s.b.:

AP2BP	HP	LA	VP7
BV1US	EH	LU	VP9
CF2HV	HR	MP4KAM	VQ4
CN8MM	HSIA	OA	VR2
CO5LF	HZ1AB	OD5BZ	VS1
CP5EK	I1LOV	OH2OJ	VS2
CR5AH	JA	OH0NC	VS4T
K5AEF	K4OSC	ON4	VS5AT
DL5	KB6	OZ5GU	VS9
DU7SV	E4Es	QZ	YU2
E4ASAR	K8	WA0	
E1s	KQ1B0	PJ2MC	KE2JA
Ft	KQ4AQ	PY	KV5A
FP8	K8S	SM	Y1A1A
FQ8	RH6	SV0	Y1UAD
F87RT	KL7	SV0 Dodec.	YV5FL
Gs	KM6	TF2	ZB1CZ
GD3GMH	KP4	TG9AD	ZC4DA
GI	KR6	T1HP	ZD4
GM	KS8	UA1DZ	ZE6
GW	KT1DD	VE	ZL
H89	KV4	VK	ZS6
HC2AGI	KW6	VP2 Leew.	ZS8
HE	KX6	VP3 Wind.	3A2AH
	KZ3	VF5	8A2TP

—C. B. Edmonds (VK3AEE)

OBLIQUE STROKE F.O.C.

Editor "A.R." Dear Sir,

It's about time some reputable organisation such as our own W.I.A. took up either with the I.A.R.U. or at least our own Postmaster-General's Department this growing habit of some selfing "oblique stroke F.O.C." after their call signs.

To me it is quite illegal and why something has not been done already beats me. For 20 years now I have been licensed VK3HG and that is the call I have always signed—nothing more and nothing less.

The F.O.C. I am told, stands for some privately sponsored "First Operator Club" and to be a member one must be "invited" by a certain number of members. Much the same, perhaps, as any decent club, except that in many cases in Australia I know of potential members who go around the bands canvassing for sponsors and this is where F.O.C. becomes a little haywire.

The addition of these three letters—F.O.C.—is perhaps the worst example of snob-value I have seen in our hobby. For anyone to lower himself to be a member of such a clique, I think, shows discredit to the true Australian democratic spirit—to me one of this country's most cherished possessions.

It has become so bad that some of the adherents to this most annoying "I am better than you class" have the cheek to sign "oblique stroke F.O.C." even to their CQs.

I appeal to Federal Executive to take this matter up and stop it immediately. It is most un-Australian, undemocratic

I imagine that as conditions have been fairly good of late everyone is hard at the job of listening for those elusive new countries, as in a period of two months I have received only two letters. Now, come on all you s.w.l.s., you'll need to do better than that or there will definitely be no a.w.l. section in this magazine. To have notes we must have news, and as I haven't a staff of paid reporters to chase up news for me, I have to depend on your letters. So how about doing the right thing and drop me a line telling of your activities.

First off in my mail box I find a letter from Don Grantley, of Helbrook, N.S.W. Don, in between looking after his XEL, harmonic, cows, garden and auto, manages to squeeze in a little listening. He states that he is lucky in having a good location, GRM free (what a blessing) and that just a wire trailed out of the window for an antenna seems to work out OK. Don has recently logged his 100th country—KGI.

The acquisition of a new receiver and erection of several beam antennae should assist him in increasing this total. Don has been doing most of his listening on the c.w. portions of the bands. Another of his activities lately has been the dirty job of fighting bush fires. An ex-foreman, Don makes the following suggestion: "In view of the increased interest being shown in s.w.l. groups of late, how about some of the ex-W.I.A.A. members, unit operators coming into the picture and renewing your acquaintance with radio." I myself think that would be a good idea and would also apply to other ex-service wireless ops. Any of you who may be interested could drop me a line at the address shown above and I'll supply whatever information I require.

Dennis Holmes, of Warrnambool, is my other correspondent this month. Until recently he has been content to s.w.l. with a dual wave receiver covering only the 40 and 20 metre Ham bands. However, now with an ARS he has been keenly listening till all hours. Recently Dennis has heard HSB and

and time wasting. I appeal to other members of the W.I.A. who have any Australian democratic spirit to dodge these "oblique stroke F.O.C." calls like the plague. So far as I am concerned they're no different from "scab labour"—nobody wants to work with them.

—Roth Jones (VK3BG).

VREDA on 15 mx and plenty of VKs and Ws on 15 and 20. He finds listening to the s.s.b. stations real good fun. His antenna at present is a dipole.

To catch up with the details of the VK3 Group, here are some details of recent events. **November Group Meeting**—At this meeting we were pleased to welcome Ian McNabb of Elligbee, F. J. Gardiner of South Yarra, and Mr D. D. Sykes who is a member of about 30 years' standing of the Institute. At this meeting it was decided that the December meeting would be a social evening. Much time was spent in discussing such interesting things as cream cakes, sandwiches, pies, etc. and everything else to delight the hungry s.w.l. It was also decided to begin several contests for members, the details of which will be published when they have been finally worked.

December Group Meeting—Probably due to it being holiday time not many members were present. However, a good time was had by all. The hours flew quickly by while members informally discussed every worthwhile aspect of s.w.l. There was some delay in obtaining access to the suit drinks which were locked in the tx room, but a phone call brought Alan SAEI to our rescue. We thank you very much Alan for leaving on foot to get the keys in this way. After the drinks became available the feast was begun. There was food galore, but everyone hopped to with a will and disposed of the major portion of it in quick time. We would like to extend our thanks to the Divisional Council who supplied us with the suit drinks and to Jerry Stebbing, WIA-13050 who although not able to be present, supplied a really large box of sandwiches.

Personal Party—St Albans was Ken Robertson, WIA-13058, of Port Albert. Whilst in town he apparently enjoyed himself seeing as much as possible in the time spent here. Hearing some s.w.l. he decided to head back home safely with his load of new gear to try out. Bert Stebbing has by all accounts been working very hard and on the day of the Christmas-New Year rush, but by now should be enjoying a holiday somewhere up in VK4.

Michael Ide is understood to have obtained a nice long pole, so antennae should soon be smartly erected at this QTH. Nothing much has been heard of the two Group reporters—Frank Nolan and Geoff Morris—of late so we assume they are busy bringing in all the latest DX. Yours truly has now constructed a rotary W3K beam and hopes soon to have it erected on top of a 40 ft. mast. Higher gain tubes in the 12 section of the rotor has lifted the countries heard total to 187 and the going is becoming tough as far as new ones are concerned.

One interesting station heard was XVSA in Saigon, S.E. Vietnam. This station is operated by a member of an American advisory mission to the Vietnam Government and the operator's name is Randy. Details of his prospective operation have been given in recent issues of "CQ" and now he has appeared. He stated that he was running only 10 watts to a ground plane antenna and was transmitting only the upper sideband with carrier. Several VK stations managed to work him before he ran out of SA. It is sure to be in great demand. FB8AH was heard on 15 mx phone.

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DX

Frank T. Hine, W2KQI.
30 Abbotford Road
Hoboken, N.J.

Band conditions have been erratic and no two days have been the same as far as Sydney area has been concerned and this seems to be the opinion of DX stations. 14 Mc. has been notable for the rarer DX stations that have been heard calling CQ after CQ with no takers. I call to mind hearing JT1AA, EA8CE, FB8XX and listening to VQ5GJ and VQ3JTW QSO each other because they could not raise DX. My own activity has been on 14 Mc. seeing what QRP—15 watts—and a Window can do, which was quite fair, so you "young squirts" have no fears about starting off on something small for your DX hunting.

If space permits, I think some statistics of U.S. Amateur activity, which 2AGH passed on to me, may be of general interest. The number of U.S. Amateur licenses in 1950 was 80,000, at present about 160,000 and the estimated figure for 1963 is 200,000. 49% buy their transmitters. 2% are using inputs under 35 watts, 9% 35-75w., 40% 75-100w., 36% 150-500w., and 15% over 500w. Interesting figures aren't they, 78% use a.m. phone, 62% c.w., 9% a.s.b., 8% n.b.f.m., 3% teletype and 1% t.v. 7 Mc. is most popular with 87%, 28 Mc. 54%, 14 Mc. 48%, 50 Mc. 33%, and 144 Mc. 33%. No figures are given for 21 Mc. Engineers are the greatest number of licensees at 21%, then Students at 18%.

NEWS AND NOTES

Cards are now being returned from the S.A.R.L. marked "non-member" and information to hand shows the Belgian Bureau has adopted the same policy. My own personal opinion is that if this practice becomes a general policy, QSLs will become a thing of the past as Amateurs will not waste time sending a card if there is a possibility of it being returned to him. The certificate hunters will have to send all QSLs worked with I.R.C.'s to get their cards. Work out how much that is going to cost!

If you worked ZD2AO and still need his card, try again to G2AO.

Cards for FP8AA should go to K2CPR.

ZL1ABO is reported to be active from the Kermadecs on 3444 Kc. (3CX).

Yemen should be represented by the time you read these notes with a phone station using key—call sign unknown.

For his recent activity, ZM6AV was using the rig of an American YL who happened to be passing through on her way to Fiji.

UI8KAE has a YL operator for those after YLCC.

VQ8AJ is active from Chagos Is.

9K2AN stated he was in Kuwait. I have seen no comment that there has been a change of prefix from MP4AK.

* Call signs and prefixes worked.
1-zero time—G.M.T.

ACTIVITIES

15 Mc. NH reports
1 Mc. 2AIR W. C. Den Grandey:
W, KG6FAE, WIA L3040 JA1AMZ.
14 Mc Cw 2AIR HP1LO, CN8P*, 4STW*,
O4AFA, XZ2TH, VU2AJ, O4AFA, SW8W*,
IT17AJ, ZC4UP, ZK3AD, COMEL, HC1AC,
KPM2Z, VQ2QA, UASGM, ODSLX, VZ1LU,
CT3AB, CN8FA, JT1AA, LUSZO, (Shet-
land), OX4TU, CRACB, VQ2QA, FB8X,
FB8Z*, FB3CD, VQ8AJ, PYTAN G, UO3AA,
UO3KAA, SASDU 2AMR CT3AB, CN8G*,
CN8P*, CO8RM, KE1H, VSSAC, XZ2TH,
FLAAB, VTM0, KR6FC, VQ8AJ, VQ8AJ,
JT1AA, 3Q1 UP2KCB, FB8X*, VQ4KRL,
E8AAW, VV8AE, UI8KAE, VQ5GJ, JT-
1AA, OX3LD, HC1AC, LX3CH, FQ3ME,
UM8KAA, SASTH, CT2BO, KG1DG, OY7ML,
CRBAC UO3KAA, VQ8AJ, VRTIC, E8ACE,
LX2AN, VQ8AJ, ZK3AD, UASGM, FB8X,
60M, XZ2TH, COMEL, CT3AB, FLAAB,
XW8AE, PJ2AT, E8AC*, OKIKIR, YU-
IAG, PY8YQ, LUSAQ, LUBNA, and many
of the regular Europeans, FB8X, ZC3AC,
VP8BK (Georgia), VQ8AS, LUSZO, MCX
ZC3AC, FLAAB, FB8FC, ZK3AD, CRBAC,
CR1AA, UI8KAA, HP1LO, O4AFA, HE-
3IC, FB8ED, E8AP, 4DO CT3AB, XW-
BAG, HC1HI, SPIKOT, FLAAB, OQ8EW,
FACR, F3WVW, ZELU, KC8CG, JT1AA,
VU2Q, UI8KAA, CN8D, VQ8AJ, VQ8AJ,
UC2KAD, UL7GN, UN1AE, UP2KCB, CRAC,
VS4IT, ZK1BA, OQ8IE, CN8FG, SW8W*,
VQ5GJ, ZS1AQ, ZETIG, ZODY, SV8K, 60M,
DU2DO, OQ2JZ, LAGU, UR1AR, COMEL,
KR8RY, CT3AB, HUICL, ZS6AJ/PS (don't
know this one), 4STYL, 8LO CT3AB, HH-
3CL, E8AP, UASGM, UI8KAA, CRAC,
XW8AE, BRK JA, VSIGK, 3LE, CT3AB,
LZ1KAW, VQ4GT, CO8RM, UI8KAA, U-
ARAC, KOU8R, CN8FA, UN1AK, FB8X,
144, CO8R CN8P DUTSV, E8A8A, PA8J,
HH1 D, HZ1AB, KG6FAE, KG1GY, UL7KBA,
UI8KAA, COMVN, UN1AE, 4STW,
11 Mc. Phone 2AIR, K2CPR, VQ4AQ,
3A8M, DL4OX, FASFC, CO8LS, HK4DP,
HP2H1, IIAUX, GZAMG, 4STYL, 3AITV,
VS8AJ, ZM6AV, VZ8AK, VV1A, V83C,
VR1D*, VR2DA, VR4B, 4DO, 4DO,
4DO, HTLX, FASFC, UAKJA, VQ4AQ,
ZD4DT, 8R1V, UAGLA, UAKJOP, VR1,
8LO, VR1V, VV1DA, HUICL, VQ4AQ,
21D, CO2QO, Red de Balfour, IISB, IIAUX,
E8AP, CN8P, SUIME, VQ4AQ, VU2Q,
VU2AK, 4STYL, HUICL, VQ4AQ, VU2Q,
CO2OS, CONCY, VRC, VV1B, VQ4AQ, VU2Q,
JPG, HC1AE, WIA-L3040, FASFC, BV1US,
KO4PE, ZM6AV, VU2Q, KR8RY, VU2Q,
VU2BK, ZK3AD, ZS6AJ, VU2Q, VU2Q,
on 44b he heard KATMD, KR8AF, KG6FAE,
VS8BE, KR8AF, DUTSV, T1NP, T1RC, V84TU,
KR8MD, Barmy, VQ8BH, BV1US, HK-
4HW, 4X4DK VK4DC, VU2B, ZM6AV, E8-
3QX, ODSAB, IIZBK, VU2B, VV1V, ZD-
4DT, ZS3FA, VR1DA, E8AL, PY8CK, E8AL,
HIFZ.

17 Mc. Cw 2AIR: W. C. Den Grandey:
ZS1KD, SP8AK, LUSAV, and many Euro-
peans, HZ, HZLAC, UBSF, UBSKAB,
SW8W, VQ4Q.
21 Mc. Phone 3ASQ: FLAAB, OQ8RD, HL-
2AJ, UAGLA, VV1A, LX3CH, VU2Q,
VP8P, KR8RY, ZC3RC, VK8AT, YN1MF,
and many regular Europeans. Red de Balfour: MP4AK,
LX1DC, KR8K, VR1DA, VP8LD, VP8P, also
many others.
28 Mc. 2AIR W. C. Den Grandey:
ZV1RO, W.

QSLs RECEIVED

Pateboard is somewhat light on this month.
2AIR: HUICL, FTYT, FB8Z, E8AKR, FM-
TWT, 3OW, PJ8ME, UAPL, UN1AE, VY8PT,
9CL, ZK3AD, HK3JC, AKS, VRETC, ZS2MI,
SIX, FP8AS, 3LE, K8AF, K8BH, Red de
Balfour: LUSQ, ZC3AC, PR8T, VP8CM,
ET2MZ, WIA-L3040, KX8BQ, KZ5IF.

This month we welcome a number of new contributors to the column, and my thanks to them for their contributions. Thanks to 2AIR who is now thinking in terms of Quad antenna, 2AIR who found conditions erratic, 2AIR making the most of his home, back home to get amongst the good ones on 21 Mc, 2AIR who at this stage gets the most QSLs in VK2, 8C who manages to get amongst the good ones when they pop up. 3K8 is being reported as one of the most consistent VK2 c.w. 3A8M, and 4DO who keeps the VK2 prefix on the band. A special appreciation to 8RK who although he doesn't do much DXing himself, went to the trouble to QSP 50M, 5LQ and 31W activities. Red de Balfour, 3LE and 3LE and found conditions in VK1 n.s.e. Den Grandey who has improved his reception by a new antenna, Barmy Smith who would like to see a S.W.I. Group in VK2 and last but not least a new S.W.I. contributor in John McEwen WIA-L3040 who is pleased to see the end of his school exams.

One last thought before closing, the erratic conditions on 14 Mc. have forced many of the R.T.T.Y. commercials to go to telegraphy and consequently give their calls, and without exception they have all been using "R" as the first letter, which is U.S.R. allocation. What pressure are they going to bear at the forthcoming conference? Are we going to have a representative to try to look our existing allocations?

QTHs OF INTEREST

CN8FG-VIA WU6FQ (2AIR)
CN8D—Box 30, Navy 214 P.P.O., N.Y. (2AIR).
VQ8AM—Mapou, Mauritius (2AIR).
VZ1VG—VIA W4CG, ex-V43B, C/o. C.A.A.
Fort Meyers, Florida (2AIR).
OX3DL—E.D.R.
H8BLAC—Schann 423
BRACX—Box 736, Kuwait
FLAAB—VIA FB8C
FLAAB—BP121, Djibouti (4DO).
OQ8EW Kowloon, near Elizabethville (4DO).
VQ4AQ—P.O. Box 228 (4DO).
ZC3NR—Marine Dept, Sandakan (8RK).
KG4AE—Box 12, Navy 115, P.P.O., New York (8R81S).
KG1HL—A.P.O. 121, C/o P.M. New York (8R81S).



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great difficulty in keeping his beam aloft while Con 12L has been heard after an absence of two years or so. 32RX

VICTORIA

Quite a lot has happened on this band recently. 3ATW has been porting to Zerkba 32AT to Maffra and 32BP to Turrumbury. All stations have worked into Melbourne, but David 32AW and 32L 32ATW have been a bit inconsistent. It is significant that both stations were using large beams and running high power. Good break through to VK3 and VK7 have taken place. A number of times, VK3 and Dec. 18 and 19 as well as the 3rd and 4th Jan. Stations audible in Melb were TFF, VLZ, 7BQ, 32AG, 3AW and 32C. The best VK3 signal was easily 32AG, 32DP in Sale (EPP, VLZ) has heard Leo but no contact yet. George 32CQ (Hoe) has no trouble in working VK3 but has not yet heard a VK7. 32CN and other early birds have been working 3AW in the mornings at 0800.

New calls on the band include 32ET, 32KO, 3VK, 3AAV (Moe), 32FA, 32DD (Pakenham) and 32KN (Ballarat). An old timer in Kevin 3AKI recently re-appeared on the band. Welcome to the newcomers and welcome back Kevin 32CN and 32CF claim the first two-way 3QO was done on 144 Mc. 144 Mc. is now anybody dispute their claim? Leo also runs d.b on 50 Mc. 32DP Sale on 144.1 Mc. has put an 2200 ft. in the field and on his first night had high put on 144 Mc. The best VK3 signal in Melb., a big improvement on past efforts.

The results of the Field Day held on 13th Nov. were as follows: 1st. 32AI (portable) Craigburn 50 pts; 2nd. 32CG (portable) Donald, 32 pts; 3rd. 3VF (port. 8th Street), 3 pts. Seven stations were again out in the field on 15th Dec. The best VK3 (Pretty Sally) using 50, 144, 388 Mc. 32E (A'Beckett, Park), 144 Mc. 3VF (Kingslake) 144 Mc. 32AD (Somerton) 588 Mc. 32FA (Pentland Hills) 80, 144, 388 Mc. 32ET (Mt. Macedon) 144 Mc. 32CG (Tyrvalon area) 144 Mc. 32CG and 32VF had trouble and did not make any contacts. Results of VK3 land are not yet to hand. The 4th Field Day is on March 2. 32CG has indicated that he will be leaving on 15th Dec.

The last V.H.F. Group meeting took place on Dec. 18, 18 members attending. Visitor Ralph 62AD passed on greetings to the VK3 gang from Tom and I. The meeting was a very pleasant one on his return to VK3. Ralph also told the meeting of v.h.f. activity in the West and pointed out that the band was a very open one, both 50 and 56 Mc. over there. The agenda for the meeting was to discuss the rules for the current Ross Hull Contest, and the contest that is to be held in 1957 for a full scale VK3 discussion on this subject. The date tentatively selected is the 2nd March. This is a Sunday and it is hoped that the country gang a chance to come to Melb. and join the pow-wow. Dates, time and place of this meeting will be confirmed and will be published over the Sunday broadcast, so keep listening for it chaps.

VK3 V.H.F. 100 Award—Certificate No. 1. 3ABA, No. 3, 3FO; No. 3, 3FS; No. 4, 32AQ; No. 5, 32LX.

The last fox hunt for 1957 was held on Dec. 11. Laurie 3A1J being the fox. Hounds included 32A, 32B, 32C, 32D, 32E, 32F, 32G, 32H, 32I, 32J, 32K, 32L, 32M, 32N, 32O, 32P, 32Q, 32R, 32S, 32T, 32U, 32V, 32W, 32X, 32Y, 32Z, 32AA, 32AB, 32AC, 32AD, 32AE, 32AF, 32AG, 32AH, 32AI, 32AJ, 32AK, 32AL, 32AM, 32AN, 32AO, 32AP, 32AQ, 32AR, 32AS, 32AT, 32AU, 32AV, 32AW, 32AX, 32AY, 32AZ, 32BA, 32BB, 32BC, 32BD, 32BE, 32BF, 32BG, 32BH, 32BI, 32BJ, 32BK, 32BL, 32BM, 32BN, 32BO, 32BP, 32BQ, 32BR, 32BS, 32BT, 32BU, 32BV, 32BW, 32BX, 32BY, 32BZ, 32CA, 32CB, 32CC, 32CD, 32CE, 32CF, 32CG, 32CH, 32CI, 32CJ, 32CK, 32CL, 32CM, 32CN, 32CO, 32CP, 32CQ, 32CR, 32CS, 32CT, 32CU, 32CV, 32CW, 32CX, 32CY, 32CZ, 32DA, 32DB, 32DC, 32DD, 32DE, 32DF, 32DG, 32DH, 32DI, 32DJ, 32DK, 32DL, 32DM, 32DN, 32DO, 32DP, 32DQ, 32DR, 32DS, 32DT, 32DU, 32DV, 32DW, 32DX, 32DY, 32DZ, 32EA, 32EB, 32EC, 32ED, 32EE, 32EF, 32EG, 32EH, 32EI, 32EJ, 32EK, 32EL, 32EM, 32EN, 32EO, 32EP, 32EQ, 32ER, 32ES, 32ET, 32EU, 32EV, 32EW, 32EX, 32EY, 32EZ, 32FA, 32FB, 32FC, 32FD, 32FE, 32FF, 32FG, 32FH, 32FI, 32FJ, 32FK, 32FL, 32FM, 32FN, 32FO, 32FP, 32FQ, 32FR, 32FS, 32FT, 32FU, 32FV, 32FW, 32FX, 32FY, 32FZ, 32GA, 32GB, 32GC, 32GD, 32GE, 32GF, 32GG, 32GH, 32GI, 32GJ, 32GK, 32GL, 32GM, 32GN, 32GO, 32GP, 32GQ, 32GR, 32GS, 32GT, 32GU, 32GV, 32GW, 32GX, 32GY, 32GZ, 32HA, 32HB, 32HC, 32HD, 32HE, 32HF, 32HG, 32HH, 32HI, 32HJ, 32HK, 32HL, 32HM, 32HN, 32HO, 32HP, 32HQ, 32HR, 32HS, 32HT, 32HU, 32HV, 32HW, 32HX, 32HY, 32HZ, 32IA, 32IB, 32IC, 32ID, 32IE, 32IF, 32IG, 32IH, 32II, 32IJ, 32IK, 32IL, 32IM, 32IN, 32IO, 32IP, 32IQ, 32IR, 32IS, 32IT, 32IU, 32IV, 32IW, 32IX, 32IY, 32IZ, 32JA, 32JB, 32JC, 32JD, 32JE, 32JF, 32JG, 32JH, 32JI, 32JJ, 32JK, 32JL, 32JM, 32JN, 32JO, 32JP, 32JQ, 32JR, 32JS, 32JT, 32JU, 32JV, 32JW, 32JX, 32JY, 32JZ, 32KA, 32KB, 32KC, 32KD, 32KE, 32KF, 32KG, 32KH, 32KI, 32KJ, 32KL, 32KM, 32KN, 32KO, 32KP, 32KQ, 32KR, 32KS, 32KT, 32KU, 32KV, 32KW, 32KX, 32KY, 32KZ, 32LA, 32LB, 32LC, 32LD, 32LE, 32LF, 32LG, 32LH, 32LI, 32LJ, 32LK, 32LL, 32LM, 32LN, 32LO, 32LP, 32LQ, 32LR, 32LS, 32LT, 32LU, 32LV, 32LW, 32LX, 32LY, 32LZ, 32MA, 32MB, 32MC, 32MD, 32ME, 32MF, 32MG, 32MH, 32MI, 32MJ, 32MK, 32ML, 32MN, 32MO, 32MP, 32MQ, 32MR, 32MS, 32MT, 32MU, 32MV, 32MW, 32MX, 32MY, 32MZ, 32NA, 32NB, 32NC, 32ND, 32NE, 32NF, 32NG, 32NH, 32NI, 32NJ, 32NK, 32NL, 32NM, 32NO, 32NP, 32NQ, 32NR, 32NS, 32NT, 32NU, 32NV, 32NW, 32NX, 32NY, 32NZ, 32OA, 32OB, 32OC, 32OD, 32OE, 32OF, 32OG, 32OH, 32OI, 32OJ, 32OK, 32OL, 32OM, 32ON, 32OO, 32OP, 32OQ, 32OR, 32OS, 32OT, 32OU, 32OV, 32OW, 32OX, 32OY, 32OZ, 32PA, 32PB, 32PC, 32PD, 32PE, 32PF, 32PG, 32PH, 32PI, 32PJ, 32PK, 32PL, 32PM, 32PN, 32PO, 32PP, 32PQ, 32PR, 32PS, 32PT, 32PU, 32PV, 32PW, 32PX, 32PY, 32PZ, 32QA, 32QB, 32QC, 32QD, 32QE, 32QF, 32QG, 32QH, 32QI, 32QJ, 32QK, 32QL, 32QM, 32QN, 32QO, 32QP, 32QQ, 32QR, 32QS, 32QT, 32QU, 32QV, 32QW, 32QX, 32QY, 32QZ, 32RA, 32RB, 32RC, 32RD, 32RE, 32RF, 32RG, 32RH, 32RI, 32RJ, 32RK, 32RL, 32RM, 32RN, 32RO, 32RP, 32RQ, 32RR, 32RS, 32RT, 32RU, 32RV, 32RW, 32RX, 32RY, 32RZ, 32SA, 32SB, 32SC, 32SD, 32SE, 32SF, 32SG, 32SH, 32SI, 32SJ, 32SK, 32SL, 32SM, 32SN, 32SO, 32SP, 32SQ, 32SR, 32SS, 32ST, 32SU, 32SV, 32SW, 32SX, 32SY, 32SZ, 32TA, 32TB, 32TC, 32TD, 32TE, 32TF, 32TG, 32TH, 32TI, 32TJ, 32TK, 32TL, 32TM, 32TN, 32TO, 32TP, 32TQ, 32TR, 32TS, 32TT, 32TU, 32TV, 32TW, 32TX, 32TY, 32TZ, 32UA, 32UB, 32UC, 32UD, 32UE, 32UF, 32UG, 32UH, 32UI, 32UJ, 32UK, 32UL, 32UM, 32UN, 32UO, 32UP, 32UQ, 32UR, 32US, 32UT, 32UU, 32UV, 32UW, 32UX, 32UY, 32UZ, 32VA, 32VB, 32VC, 32VD, 32VE, 32VF, 32VG, 32VH, 32VI, 32VJ, 32VK, 32VL, 32VM, 32VN, 32VO, 32VP, 32VQ, 32VR, 32VS, 32VT, 32VU, 32VV, 32VW, 32VX, 32VY, 32VZ, 32WA, 32WB, 32WC, 32WD, 32WE, 32WF, 32WG, 32WH, 32WI, 32WJ, 32WK, 32WL, 32WM, 32WN, 32WO, 32WP, 32WQ, 32WR, 32WS, 32WT, 32WU, 32WV, 32WW, 32WX, 32WY, 32WZ, 32XA, 32XB, 32XC, 32XD, 32XE, 32XF, 32XG, 32XH, 32XI, 32XJ, 32XK, 32XL, 32XM, 32XN, 32XO, 32XP, 32XQ, 32XR, 32XS, 32XT, 32XU, 32XV, 32XW, 32XX, 32XY, 32XZ, 32YA, 32YB, 32YC, 32YD, 32YE, 32YF, 32YG, 32YH, 32YI, 32YJ, 32YK, 32YL, 32YM, 32YN, 32YO, 32YP, 32YQ, 32YR, 32YS, 32YT, 32YU, 32YV, 32YW, 32YX, 32YY, 32YZ, 32ZA, 32ZB, 32ZC, 32ZD, 32ZE, 32ZF, 32ZG, 32ZH, 32ZI, 32ZJ, 32ZK, 32ZL, 32ZM, 32ZN, 32ZO, 32ZP, 32ZQ, 32ZR, 32ZS, 32ZT, 32ZU, 32ZV, 32ZW, 32ZX, 32ZY, 32ZZ, 32AA, 32AB, 32AC, 32AD, 32AE, 32AF, 32AG, 32AH, 32AI, 32AJ, 32AK, 32AL, 32AM, 32AN, 32AO, 32AP, 32AQ, 32AR, 32AS, 32AT, 32AU, 32AV, 32AW, 32AX, 32AY, 32AZ, 32BA, 32BB, 32BC, 32BD, 32BE, 32BF, 32BG, 32BH, 32BI, 32BJ, 32BK, 32BL, 32BM, 32BN, 32BO, 32BP, 32BQ, 32BR, 32BS, 32BT, 32BU, 32BV, 32BW, 32BX, 32BY, 32BZ, 32CA, 32CB, 32CC, 32CD, 32CE, 32CF, 32CG, 32CH, 32CI, 32CJ, 32CK, 32CL, 32CM, 32CN, 32CO, 32CP, 32CQ, 32CR, 32CS, 32CT, 32CU, 32CV, 32CW, 32CX, 32CY, 32CZ, 32DA, 32DB, 32DC, 32DD, 32DE, 32DF, 32DG, 32DH, 32DI, 32DJ, 32DK, 32DL, 32DM, 32DN, 32DO, 32DP, 32DQ, 32DR, 32DS, 32DT, 32DU, 32DV, 32DW, 32DX, 32DY, 32DZ, 32EA, 32EB, 32EC, 32ED, 32EE, 32EF, 32EG, 32EH, 32EI, 32EJ, 32EK, 32EL, 32EM, 32EN, 32EO, 32EP, 32EQ, 32ER, 32ES, 32ET, 32EU, 32EV, 32EW, 32EX, 32EY, 32EZ, 32FA, 32FB, 32FC, 32FD, 32FE, 32FF, 32FG, 32FH, 32FI, 32FJ, 32FK, 32FL, 32FM, 32FN, 32FO, 32FP, 32FQ, 32FR, 32FS, 32FT, 32FU, 32FV, 32FW, 32FX, 32FY, 32FZ, 32GA, 32GB, 32GC, 32GD, 32GE, 32GF, 32GG, 32GH, 32GI, 32GJ, 32GK, 32GL, 32GM, 32GN, 32GO, 32GP, 32GQ, 32GR, 32GS, 32GT, 32GU, 32GV, 32GW, 32GX, 32GY, 32GZ, 32HA, 32HB, 32HC, 32HD, 32HE, 32HF, 32HG, 32HH, 32HI, 32HJ, 32HK, 32HL, 32HM, 32HN, 32HO, 32HP, 32HQ, 32HR, 32HS, 32HT, 32HU, 32HV, 32HW, 32HX, 32HY, 32HZ, 32IA, 32IB, 32IC, 32ID, 32IE, 32IF, 32IG, 32IH, 32II, 32IJ, 32IK, 32IL, 32IM, 32IN, 32IO, 32IP, 32IQ, 32IR, 32IS, 32IT, 32IU, 32IV, 32IW, 32IX, 32IY, 32IZ, 32JA, 32JB, 32JC, 32JD, 32JE, 32JF, 32JG, 32JH, 32JI, 32JJ, 32JK, 32JL, 32JM, 32JN, 32JO, 32JP, 32JQ, 32JR, 32JS, 32JT, 32JU, 32JV, 32JW, 32JX, 32JY, 32JZ, 32KA, 32KB, 32KC, 32KD, 32KE, 32KF, 32KG, 32KH, 32KI, 32KJ, 32KL, 32KM, 32KN, 32KO, 32KP, 32KQ, 32KR, 32KS, 32KT, 32KU, 32KV, 32KW, 32KX, 32KY, 32KZ, 32LA, 32LB, 32LC, 32LD, 32LE, 32LF, 32LG, 32LH, 32LI, 32LJ, 32LK, 32LM, 32LN, 32LO, 32LP, 32LQ, 32LR, 32LS, 32LT, 32LU, 32LV, 32LW, 32LX, 32LY, 32LZ, 32MA, 32MB, 32MC, 32MD, 32ME, 32MF, 32MG, 32MH, 32MI, 32MJ, 32MK, 32ML, 32MN, 32MO, 32MP, 32MQ, 32MR, 32MS, 32MT, 32MU, 32MV, 32MW, 32MX, 32MY, 32MZ, 32NA, 32NB, 32NC, 32ND, 32NE, 32NF, 32NG, 32NH, 32NI, 32NJ, 32NK, 32NL, 32NM, 32NO, 32NP, 32NQ, 32NR, 32NS, 32NT, 32NU, 32NV, 32NW, 32NX, 32NY, 32NZ, 32OA, 32OB, 32OC, 32OD, 32OE, 32OF, 32OG, 32OH, 32OI, 32OJ, 32OK, 32OL, 32OM, 32ON, 32OO, 32OP, 32OQ, 32OR, 32OS, 32OT, 32OU, 32OV, 32OW, 32OX, 32OY, 32OZ, 32PA, 32PB, 32PC, 32PD, 32PE, 32PF, 32PG, 32PH, 32PI, 32PJ, 32PK, 32PL, 32PM, 32PN, 32PO, 32PP, 32PQ, 32PR, 32PS, 32PT, 32PU, 32PV, 32PW, 32PX, 32PY, 32PZ, 32QA, 32QB, 32QC, 32QD, 32QE, 32QF, 32QG, 32QH, 32QI, 32QJ, 32QK, 32QL, 32QM, 32QN, 32QO, 32QP, 32QQ, 32QR, 32QS, 32QT, 32QU, 32QV, 32QW, 32QX, 32QY, 32QZ, 32RA, 32RB, 32RC, 32RD, 32RE, 32RF, 32RG, 32RH, 32RI, 32RJ, 32RK, 32RL, 32RM, 32RN, 32RO, 32RP, 32RQ, 32RR, 32RS, 32RT, 32RU, 32RV, 32RW, 32RX, 32RY, 32RZ, 32SA, 32SB, 32SC, 32SD, 32SE, 32SF, 32SG, 32SH, 32SI, 32SJ, 32SK, 32SL, 32SM, 32SN, 32SO, 32SP, 32SQ, 32SR, 32SS, 32ST, 32SU, 32SV, 32SW, 32SX, 32SY, 32SZ, 32TA, 32TB, 32TC, 32TD, 32TE, 32TF, 32TG, 32TH, 32TI, 32TJ, 32TK, 32TL, 32TM, 32TN, 32TO, 32TP, 32TQ, 32TR, 32TS, 32TT, 32TU, 32TV, 32TW, 32TX, 32TY, 32TZ, 32UA, 32UB, 32UC, 32UD, 32UE, 32UF, 32UG, 32UH, 32UI, 32UJ, 32UK, 32UL, 32UM, 32UN, 32UO, 32UP, 32UQ, 32UR, 32US, 32UT, 32UU, 32UV, 32UW, 32UX, 32UY, 32UZ, 32VA, 32VB, 32VC, 32VD, 32VE, 32VF, 32VG, 32VH, 32VI, 32VJ, 32VK, 32VL, 32VM, 32VN, 32VO, 32VP, 32VQ, 32VR, 32VS, 32VT, 32VU, 32VV, 32VW, 32VX, 32VY, 32VZ, 32WA, 32WB, 32WC, 32WD, 32WE, 32WF, 32WG, 32WH, 32WI, 32WJ, 32WK, 32WL, 32WM, 32WN, 32WO, 32WP, 32WQ, 32WR, 32WS, 32WT, 32WU, 32WV, 32WW, 32WX, 32WY, 32WZ, 32XA, 32XB, 32XC, 32XD, 32XE, 32XF, 32XG, 32XH, 32XI, 32XJ, 32XK, 32XL, 32XM, 32XN, 32XO, 32XP, 32XQ, 32XR, 32XS, 32XT, 32XU, 32XV, 32XW, 32XX, 32XY, 32XZ, 32YA, 32YB, 32YC, 32YD, 32YE, 32YF, 32YG, 32YH, 32YI, 32YJ, 32YK, 32YL, 32YM, 32YN, 32YO, 32YP, 32YQ, 32YR, 32YS, 32YT, 32YU, 32YV, 32YW, 32YX, 32YZ, 32ZA, 32ZB, 32ZC, 32ZD, 32ZE, 32ZF, 32ZG, 32ZH, 32ZI, 32ZJ, 32ZK, 32ZL, 32ZM, 32ZN, 32ZO, 32ZP, 32ZQ, 32ZR, 32ZS, 32ZT, 32ZU, 32ZV, 32ZW, 32ZX, 32ZY, 32ZZ, 32AA, 32AB, 32AC, 32AD, 32AE, 32AF, 32AG, 32AH, 32AI, 32AJ, 32AK, 32AL, 32AM, 32AN, 32AO, 32AP, 32AQ, 32AR, 32AS, 32AT, 32AU, 32AV, 32AW, 32AX, 32AY, 32AZ, 32BA, 32BB, 32BC, 32BD, 32BE, 32BF, 32BG, 32BH, 32BI, 32BJ, 32BK, 32BL, 32BM, 32BN, 32BO, 32BP, 32BQ, 32BR, 32BS, 32BT, 32BU, 32BV, 32BW, 32BX, 32BY, 32BZ, 32CA, 32CB, 32CC, 32CD, 32CE, 32CF, 32CG, 32CH, 32CI, 32CJ, 32CK, 32CL, 32CM, 32CN, 32CO, 32CP, 32CQ, 32CR, 32CS, 32CT, 32CU, 32CV, 32CW, 32CX, 32CY, 32CZ, 32DA, 32DB, 32DC, 32DD, 32DE, 32DF, 32DG, 32DH, 32DI, 32DJ, 32DK, 32DL, 32DM, 32DN, 32DO, 32DP, 32DQ, 32DR, 32DS, 32DT, 32DU, 32DV, 32DW, 32DX, 32DY, 32DZ, 32EA, 32EB, 32EC, 32ED, 32EE, 32EF, 32EG, 32EH, 32EI, 32EJ, 32EK, 32EL, 32EM, 32EN, 32EO, 32EP, 32EQ, 32ER, 32ES, 32ET, 32EU, 32EV, 32EW, 32EX, 32EY, 32EZ, 32FA, 32FB, 32FC, 32FD, 32FE, 32FF, 32FG, 32FH, 32FI, 32FJ, 32FK, 32FL, 32FM, 32FN, 32FO, 32FP, 32FQ, 32FR, 32FS, 32FT, 32FU, 32FV, 32FW, 32FX, 32FY, 32FZ, 32GA, 32GB, 32GC, 32GD, 32GE, 32GF, 32GG, 32GH, 32GI, 32GJ, 32GK, 32GL, 32GM, 32GN, 32GO, 32GP, 32GQ, 32GR, 32GS, 32GT, 32GU, 32GV, 32GW, 32GX, 32GY, 32GZ, 32HA, 32HB, 32HC, 32HD, 32HE, 32HF, 32HG, 32HH, 32HI, 32HJ, 32HK, 32HL, 32HM, 32HN, 32HO, 32HP, 32HQ, 32HR, 32HS, 32HT, 32HU, 32HV, 32HW, 32HX, 32HY, 32HZ, 32IA, 32IB, 32IC, 32ID, 32IE, 32IF, 32IG, 32IH, 32II, 32IJ, 32IK, 32IL, 32IM, 32IN, 32IO, 32IP, 32IQ, 32IR, 32IS, 32IT, 32IU, 32IV, 32IW, 32IX, 32IY, 32IZ, 32JA, 32JB, 32JC, 32JD, 32JE, 32JF, 32JG, 32JH, 32JI, 32JJ, 32JK, 32JL, 32JM, 32JN, 32JO, 32JP, 32JQ, 32JR, 32JS, 32JT, 32JU, 32JV, 32JW, 32JX, 32JY, 32JZ, 32KA, 32KB, 32KC, 32KD, 32KE, 32KF, 32KG, 32KH, 32KI, 32KJ, 32KL, 32KM, 32KN, 32KO, 32KP, 32KQ, 32KR, 32KS, 32KT, 32KU, 32KV, 32KW, 32KX, 32KY, 32KZ, 32LA, 32LB, 32LC, 32LD, 32LE, 32LF, 32LG, 32LH, 32LI, 32LJ, 32LK, 32LM, 32LN, 32LO, 32LP, 32LQ, 32LR, 32LS, 32LT, 32LU, 32LV, 32LW, 32LX, 32LY, 32LZ, 32MA, 32MB, 32MC, 32MD, 32ME, 32MF, 32MG, 32MH, 32MI, 32MJ, 32MK, 32ML, 32MN, 32MO, 32MP, 32MQ, 32MR, 32MS, 32MT, 32MU, 32MV, 32MW, 32MX, 32MY, 32MZ, 32NA, 32NB, 32NC, 32ND, 32NE, 32NF, 32NG, 32NH, 32NI, 32NJ, 32NK, 32NL, 32NM, 32NO, 32NP, 32NQ, 32NR, 32NS, 32NT, 32NU, 32NV, 32NW, 32NX, 32NY, 32NZ, 32OA, 32OB, 32OC, 32OD, 32OE, 32OF, 32OG, 32OH, 32OI, 32OJ, 32OK, 32OL, 32OM, 32ON, 32OO, 32OP, 32OQ, 32OR, 32OS, 32OT, 32OU, 32OV, 32OW, 32OX, 32OY, 32OZ, 32PA, 32PB, 32PC, 32PD, 32PE, 32PF, 32PG, 32PH, 32PI, 32PJ, 32PK, 32PL, 32PM, 32PN, 32PO, 32PP, 32PQ, 32PR, 32PS, 32PT, 32PU, 32PV, 32PW, 32PX, 32PY, 32PZ, 32QA, 32QB, 32QC, 32QD, 32QE, 32QF, 32QG, 32QH, 32QI, 32QJ, 32QK, 32QL, 32QM, 32QN, 32QO, 32QP, 32QQ, 32QR, 32QS, 32QT, 32QU, 32QV, 32QW, 32QX, 32QY, 32QZ, 32RA, 32RB, 32RC, 32RD, 32RE, 32RF, 32RG, 32RH, 32RI, 32RJ, 32RK, 32RL, 32RM, 32RN, 32RO, 32RP, 32RQ, 32RR, 32RS, 32RT, 32RU, 32RV, 32RW, 32RX, 32RY, 32RZ, 32SA, 32SB, 32SC, 32SD, 32SE, 32SF, 32SG, 32SH, 32SI, 32SJ, 32SK, 32SL, 32SM, 32SN, 32SO, 32SP, 32SQ, 32SR, 32SS, 32ST, 32SU, 32SV, 32SW, 32SX, 32SY, 32SZ, 32TA, 32TB, 32TC, 32TD, 32TE, 32TF, 32TG, 32TH, 32TI, 32TJ, 32TK, 32TL, 32TM, 32TN, 32TO, 32TP, 32TQ, 32TR, 32TS, 32TT, 32TU, 32TV, 32TW, 32TX, 32TY, 32TZ, 32UA, 32UB, 32UC, 32UD, 32UE, 32UF, 32UG, 32UH, 32UI, 32UJ, 32UK, 32UL, 32UM, 32UN, 32UO, 32UP, 32UQ, 32UR, 32US, 32UT, 32UU, 32UV, 32UW, 32UX, 32UY, 32UZ, 32VA, 32VB, 32VC, 32VD, 32VE, 32VF, 32VG, 32VH, 32VI, 32VJ, 32VK, 32VL, 32VM, 32VN, 32VO, 32VP, 32VQ, 32VR, 32VS, 32VT, 32VU, 32VV, 32VW, 32VX, 32VY, 32VZ, 32WA, 32WB, 32WC, 32WD, 32WE, 32WF, 32WG, 32WH, 32WI, 32WJ, 32WK, 32WL, 32WM, 32WN, 32WO, 32WP, 32WQ, 32WR, 32WS, 32WT, 32WU, 32WV, 32WW, 32WX, 32WY, 32WZ, 32XA, 32XB, 32XC, 32XD, 32XE, 32XF, 32XG, 32XH, 32XI, 32XJ, 32XK, 32XL, 32XM, 32XN, 32XO, 32XP, 32XQ, 32XR, 32XS, 32XT, 32XU, 32XV, 32XW, 32XX, 32XY, 32XZ, 32YA, 32YB, 32YC, 32YD, 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NOTES

FEDERAL

RESIGNATION FROM FEDERAL EXECUTIVE

It is with regret that Federal Executive notices members that Bill Falconer, 3AWF, has resigned from his position of Business Manager. During the time Bill has been with Executive, his thoughtful consideration has been a powerful factor in the solution of many problems. His training as an actuary has served good purpose in making many a detailed analysis of various surveys and results. However, he finds that other commitments will not allow him to continue to give to Executive the time he feels it deserves. Bill is certain that all members will be grateful to Bill for his efforts and will await the day when time permits him to return to some official position.

LIST OF PERSONS WHO QUALIFIED FOR AMATEUR OPERATORS' CERTIFICATES

- New South Wales
 *R. B. Butler, Black Forest, Bingara.
 *J. J. Canon, 23 Jeffery Ave., North Parramatta.
 *W. E. R. Cleary, 191 Bruce St., Merewether, 2N.
 *A. Cork, 18 Bank St., Mologoy.
 *J. E. Cumming, 8 Sordie St., Castlereagh.
 *O. F. Dent, 20 N.S.W. Crescent, Forest, Canberra.
 *H. de Wiert, 1/2 Connel Rd., Brookvale.
 *B. K. Hall, 17/26 Melody St., Coogee.
 *W. G. Kirchner, 38 Walcott St., Kahlbah.
 *J. W. Lamborn, Kooba St., Berrillon.
 *A. J. C. McKelvie, 1 Whitton St., Griffith.
 Victoria
 *A. Auld, 14 Sargood St., Toorak.
 *W. J. Bell, Sawwood Park, Wangoom.
 *R. A. H. Blake, Telatungat East via Northam.
 *J. E. Brown, 39 Grevelles Rd., West Warrnambool.
 *D. McC. Eales, 27 Balls Vue St., Lilydale.
 *E. G. Egan, 4 Edith St., Caulfield.
 *J. Goss, 1 Burners Rd., South Caulfield.
 *V. E. Madden, McDonald St., Murrumbidgee.
 *J. L. Morris, 224 Burwood Rd., Burwood.
 *D. B. May, St. 5, 5.
 *P. B. Nanton, 45 McDonald St., West Preston.
 *A. Parker, Post Office, Tawonga South.
 *H. Payne, 48 Park Crescent, Yew, E.A.
 *A. Ratchford, 9 Summit Rd., Burwood.
 *J. Russell, 6 Narracon Ave., Yallourn.
 *D. W. Small, Box 32, Raleigh.
 *W. Wilkenson, 25 Lloyd St., Belmont.
 *R. Gee-ong.
 Queensland
 *H. Bignell, 18 Scarborough St., Scarness.
 *H. E. Brown, 23 Fegan Drive, Moorooka.
 *M. Burton, 30 Kelsey St., Camp Hill.
 *E. A. Calahan, 180 Ashgrove Ave., Ashgrove.
 *G. W. Houghton, Station Rd., Oxley.
 *A. R. Kruger, 285 Tully Rd., Wynnum.
 *T. E. Meredith, 89 Thorn St., Ipswich.

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.



ROSS HULL MEMORIAL—

NOTE: 80-50, 50-30 Mc. bands now considered separate bands for overseas contacts when compiling scores.
 Return of Logs Postmarked not later than Saturday, 1st March, 1958.

NATIONAL FIELD DAY—

Return of Logs Postmarked not later than Saturday, 15th February, 1958.

REMEMBER DAY CONTEST—

Dates: Saturday, 16th August—Sunday, 17th August, 1958. Duration: 1500 hours E.A.S.T. 1759 E.A.S.T.
 Note: See amendments this issue.
 Voting return date: 31st March, 1958.

A.R.R.L. DX COMPETITION—

Dates: Phone—February 7 to 9; March 7 to 9. C.W.—February 21 to 23, March 21 to 23.

- *D. Muller, R.A.A.F. Hdq., Sturt St., Townsville.
 *W. S. O'Donnell, 24 Yates St., Railway Estate, Townsville.
 *J. J. Parow, P.O. Box 298, Dalby.
 *Y. Tashanoff, 30 Kelsey St., Camp Hill.
 South Australia
 *C. A. Appleby, 1 Wolseley Tce., Woodlands Park.
 *M. A. Bone, 1 Dean Grove, Merryville.
 *M. J. Brunker, 39 Rowland Rd., Miltren.
 *M. R. Burton, 35 Angus Ave., North Walkerville.
 *R. L. Dyer, 61 Third Ave., Seddon Park.
 *S. Gabb Post Office, Mairne.
 *H. W. Hancock, 13 OG Road, Kierning.
 *C. G. Luke, 16 Kenway St., Tumby Bay.
 *P. A. Rowe, 23 Fisher St., Fullarton Estate.
 Western Australia
 *B. G. Cook, Magnetic Observatory, Watheroo.
 *W. F. Dunn, Box 15, Hyden.
 *D. J. Lysie, 84 Mackie St., Victoria Park.
 *L. G. Rock, 35 Essex St., Wembley.
 *M. H. Saw, 28 Auburn Rd., Double Day.
 *C. O. Woods, 180 Margaret St., Ashfield.
 Tasmania
 *M. G. Foster, 22 Married Qrtz., Brighton Camp.
 *M. F. McGinnis, Cable Station, King Island.
 Territory of New Guinea
 *R. H. Murphy, C/o, Dept. Posts and Telegraphs, Port Moresby.
 *Qualified for the Limited Certificate.

FEDERAL QSL BUREAU

The Danish Society (E.D.R.) advise that the new QSL Bureau address is Box 335, Aalborg, Denmark. OZ4HJ who has been QSL Manager for over 20 years, has now retired and the duties have been undertaken by OZ2NU. The rules for the Danish European (W.A.E.) DX Contest for 1958 have just come to hand. As a result it was not possible to publish same prior to the commencement of the Contest. C.W.—1800 G.M.T. 3rd Jan. to 2400 G.M.T. 5th Jan. Phone—1800 G.M.T. 4th Apr. to 1800 G.M.T. 5th Apr. Some of the rules have been altered slightly and the scoring varied. Entrants are advised to get a full copy of the rules from their Divisional Bureau or from the Federal QSL Manager. The EI QSL Bureau has a new address which is 39 Bocterswin Avenue, Blackrock, Dublin, Eire. They also state that S.W. or Listeners' cards will NOT be handed.

An outsize in QSL cards comes from a small island—GD4VH, who works mainly on 7 Mc. c.w. around 1800. Other list signs held by GD4VH are G3TV from back in 1923, and G3BHE post-war.

Writing on the eve of his departure for Newson, Doug Twigg gives some interesting details of the Hams in this year's party, and of some of the objectives of the 1958 expedition. The full list of Hams in the 1958 team is as follows:

Macquarie Island—
 George Heindricks, Radio Supervisor, VK6KT (ex-VK3J).
 Harry Knox, Radio Officer, VK6KH.
 Tom Caldwell, Radio Officer, VK6TC.

Newson—

Doug Twigg, Radio Supervisor, VK6JL (ex-VK1J Macquarie, ex-VK3J, ex-VK7J).
 Alex Brown, Radio Officer, VK6DA (ex-VK1A, 1800).
 Bob Oldfield, Radio Officer, VK6RO.
 Peter King, Radio Officer, VK6PK (staying for second year).

Ray Arnell, Geophysical Assistant, VK6RA (ex-VK1RR Macquarie, and VK6RR, also staying second year).

Ray Bourke, Meteorologist, VK6RB.
 Bruce Cook, Geophysicist, VK6BC.

Davis—
 Elliott Trigwell ("Trig"), Radio Supervisor, VK6AT.
 Peter Turner, Radio Officer, VK6PT.

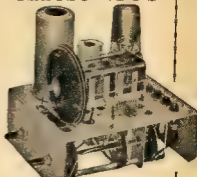
The Macquarie contingent are already there and active, but the Newson and Davis bunch did not depart until 3rd January and do not expect to be at their stations until mid February. On the way down they are installing

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an Automatic Weather Station, the location of which is expected to be on a small island in Davis Bay on the Wilkes Coast about the same longitude as Adelaide. The gear for this station will consist of two transmitters that operate simultaneously from lead acid batteries which are charged by wind driven generators. The transmitters are triggered off by a very accurate clock which puts the transmitters on the air every six hours. The transmitters consist of a call sign "VWVK" sent about 14 times, break sign, two letters for barometer, break sign, two letters for thermometer, break sign, one letter for wind speed, one letter for wind direction, break sign. This weather data is repeated three times before the transmission closes. The frequencies of the transmitters are 7315 Kc. and 15445 Kc. Each transmitter has a power output of about 40 watts which is fed into dipoles. The transmissions will be intercepted by Macquarie Island and Davis Bay and forwarded to Australia. They are expected to be in operation by the end of January.

A new 1kw. transmitter is being taken to Mawson to supplement the ATC's already there. Tape perforating and transmitting equipment is also to be installed to assist in handling the increasing traffic load. To be erected is a 150 ft. radio tower which is to be a vertical radiator for the m/f. homing beacon. An earth mat for this antenna has also to be laid.

Individual Ham activity at Mawson may have to be curtailed due to the large number of Hams in this year's party and a roster sharing the limited time seems to be the only solution. The main transmitters are in operation for approx. 15 hours daily, which in another factor likely to make inroads into Ham activity. It would appear that the greatest individual Ham activity will therefore come from Davis communication.

Bill Storer VK4EJ, Lot 11, Prince Charles Street French's Forest, Sydney, N.S.W. has offered to handle the entire year's whole Antarctic bunch this year. His offer, I understand, has been accepted. It certainly has the approbation of the Federal QSL Manager.

Bill VK4EJ, now has the log of VK1GA. Cards are being printed in W. land and are expected soon. Bill will then get to work and clean up all outstanding VK1GA QSLs. You deserve to "make" the Procedure List Bill.

Writer has 1956 and 1957 issues of "CQ" practically complete. They are hogging too much space in a small shack, to first in with the postage, cartage or what have you gets them.

Received a visit from Bill Ryan, K1BEC, currently radio officer on "Australind" and signing K1BEC/MM from that vessel when off

duty. Bill has a yen for VK and ZL. Likes our climate, scenery, customs, and way of life and may settle for ZL as a permanent abode later on. He hopes at conclusion of current voyage to get a few trips on one of the Star liners.

Ray Jones, VK3RJ, Manager.

NEW SOUTH WALES

The monthly meeting of the New South Wales Division was held at Science House, Gloucester Street on Friday, 20th December. As is the practice for our Xmas meeting, a film night was held. A very excellent programme was presented by Mr. Haywood, of the P.M.C.'s Department, who showed a number of films from their library, included in the programme was "The Overland Telegraph Line", "The Channel Country", "The Olympic Games" together with a comedy "Hurricane". These films dealt with the technical aspects of the several internal aspects of their subject and provided an excellent evening's entertainment for the members present.

Following the films, Mr. J. Reed, 2FR, gave a lecture on "Spulnik". Illustrating by means of charts and maps, the orbit of the satellite around the earth and many other interesting points relating to transmission of signals from "Spulnik".

Votes of thanks to Mr. Haywood and Mr. Reed were moved by Messrs. Goddard and Cummins.

During the business portion of the meeting, the Chairman reported that the 25 kva. emergency power plant had been despatched to Sydney for installation at 2WI Dural and the log book showed that it had less than 150 hours running. There were also a number of the latest text books on display which had been procured for the Divisional library. These would be held at 2WI Dural until after the Hamfest when they will be available to members through the usual library service.

The meeting was closed at 10.15 p.m. to allow coffee to be served and members to have a final "netter" for 1957.

W.I.C.E.N.—At the invitation of Bill 2HZ a meeting was held at his home in Springwood on 4th December to discuss the formation of W.I.C.E.N. in the Blue Mountain areas. Those present were 3MZ, 2BK, 3ARK, 2QA, 2EV, Divisional W.I.C.E.N. Officer (AARG) and Divisional President (AARG).

Following the disastrous fires, the necessity for emergency mobile and portable radio equipment has been made more evident.

Discussion on the type of equipment most suitable and frequencies to be used brought

forward many ideas and it was decided to use the 5 mhz band for local point to point operations. Further work on this network will be continued in January. All Amateurs in the Blue Mountains area are invited to contact Bill 2HZ.

During the latter part of December members of the Griffith Radio Club were called upon to provide cover for 2WI Dural during heavy fires in that section of the State. Members with mobile equipment operated right up to the fire front and greatly assisted the authorities in maintaining communications between parties building fire breaks and with neighbouring towns.

Further progress has been made during December with the v.h.f. links to 2WI at Dural. A 5 mhz link from Goxford to Palm Beach and relay on 2 mhz to 2WI Dural has been successfully established and allowed the members of the Central Coast section of the Division to participate in the Sunday morning broadcast.

The v.h.f. news has also been given over a 2 mhz link from 2PM's QTH at Castlereagh. A relay from LISA at Wyong (a distance of 40 miles from 2WI at Dural) gave some indication of the possibilities such links have in times of emergency.

Preparations are in hand for the Uruanga Convention to be held on the Easter week-end. For those who have not consulted the calendar this is the first week in April. Arrangements for the Convention are being handled by Noel 2AHH.

Members are reminded that their annual subscriptions are due on 1st March. Payment by cheque or money order will greatly assist the Treasurer.

VICTORIA

Well, another Christmas has come and gone and is nearly as far away again as ever.

Now that the New Year is well on its way, it is hoped that the usual resolutions have now been made and that they really bear fruit in the year ahead. As a matter of fact, resolutions are much easier made than done, there is not much achieved without them, so let's give up the rocks, grit, the sweat and get cracking. Even a resolve to keep the shack tidier this year is something. Anyway, I hope to do a little.

No doubt most of you were listening to the Sunday morning broadcast on 22nd December and heard our President, Fred 3FS, give his Christmas message. I have to admit that if not then you will be interested to hear that Fred sent seasonal greetings to all city and country members and thanked all who have served the Division in any way since he has been in charge the year. He especially thanked Jay Lancaster, our very active Secretary, and David Wandlaw, our Federal Constitutive who have given sterling service during 1957. Special thanks were also given to the South Western Zone for their very successful role as hosts to the State Convention, which was held at Colac on this occasion.

Thanks are also due to our worthy President for his guiding influence as the success of the last year's activities of the Division has been due in no small measure to his efforts. Our Institute doesn't run itself but



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0.25/400V. 2/5 ea.
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0.5/200V. 2/7 ea.
0.5/400V. 3/11 ea.
0.5/600V. 4/1 ea.

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